Digitization of the Algerian public sector: how is it evolving?

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Abstract:
Electronic government, or e-government, is becoming an essential tool in the management of public administration throughout the world. Both the World Bank and the United Nations insist that every state must make use of e-government to strengthen democracy and good governance. It is therefore interesting to study the evolution of its installation in the Algerian context, marked by a highly bureaucratic administration. To support this, we have used the UN's key indicators for evaluating the development of e-government, and official data, particularly those of an informational and statistical nature, collected from Algerian authorities and other international sites. Our conclusion is that the installation and evolution of e-government and, consequently, the provision of online services in Algeria suffer from various deficiencies, particularly political ones due to the instability of the executive power.

Keywords: *Digitalization, public sector, evolution, Algeria.*

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Introduction.

The use of the Internet and information and communication technologies (ICTs) by governments is spreading throughout the world. The Internet has become an essential tool in day-to-day government administration. This practice, as a model for modernizing public administration, has given rise to electronic government or e-government (United Nations - DPEPA, 2002). The use of the Internet helps to make public policy more efficient and transparent, and consequently to improve the delivery of public services. The synthetic definition of e-gouvernement is "the delivery of [government] information and services online via the Internet or other digital means, e-government or digital government has the potential to improve connections with citizens, businesses, and other governments'' (Tolbert, Mossberger, McNeal, 2008). So e-gouvernement policy, the use of IT tools and equipment, aims to reduce bureaucratic procedures and give citizens the opportunity to participate and interact in public decision-making (Norris, D.F. 2010). In this sense, its objective is twofold: to govern better in order to serve the citizen better, with a view to good governance. Technologically, e-gouvernement is the multiplication of its supports, i.e. electronic government platforms and official websites. And theoretically, more the flow and speed of the Internet are higher, on the one hand, more information and communication technologies and electronic media (Stoica,V., Loghin Dumitriu,N. 2024) become sophisticated, on the other hand, therefore more e-gouvernement is growing more the relationship between citizens and government changes for the better. But neither the initiation nor the development of e-gouvernement is automatic or self-evident. Firstly, it's a question of the context of application, where failure to take account of its characteristics can lead to errors and inefficiency: "many governmental institutions copy the best features of other institutions websites without considering their particular objectives and values" (Gavriluță, Stoica, Fârte, 2022). Another inefficiency factor - of a behavioral nature - may arise in relation to reluctance and resistance to change, particularly that which challenges the authority of those in charge in a context where informality (procedure) is common practice. As a result, the supply of e-services suffers in terms of quantity, quality and delivery times. We therefore ask what is the significance of this last statement in the context of the installation of e-government in Algeria.

The purpose of this article is therefore to examine how e-gouvernement is initiated in a developing country importing all its technology from abroad, and where informality and bureaucracy are systemic practices. And starting from the premise that public policy is what the gouvernement decides and does, we ask: how does the Algerian State decide on the installation of e-government or, more generally, on the digitization of public administration? How has the advent of e-gouvernement evolved so far? What is the state of the e-services offering, and what improvements have been made to the government-citizen relationship as a result?

To answer this question, we take a brief look at e-gouvernement from the existing literature, then focus on the Algerian context, using official data to support our analysis: mainly those provided by United Nations e-gouvernement survey reports, while the rare Algerian data are those provided by the national press or a few ministerial reports and statements: Algerian websites provide no statistical data on the number of e-services applicants, nor on e-grievances or e-claims, and evenless on satisfied or pending requests,..

We are therefore only interested in the evaluation of the development of e-government and the resulting general indicators for the provision of dematerialized

services. Our analysis will be based on an evolutionary perspective, i.e. we will examine the degree of progress of public sector digitization over time, using the appropriate indicators. To achieve this, the preferred analytical tool is the one developed by experts from the United Nations, namely the e-gouvernement development indicator and its main component, the e-services sub-indicator. Based on those performance indicators, we will compare the ante and post covid19 periods, i.e. 2010/2018, during which the gouvernement paid particular attention to the implementation of e-government, and 2022/2024, during which the normal resumption of activities is confirmed, benefiting from the experience of working and communicating remotely acquired during the covid-19 pandemic period. In fact, the intense use of information and communication technology (ICT), to which the world's States, including Algeria, have resorted, theoretically makes governments more accountable to their citizens (Gavriluță, Stoica, Fârte, 2022). At the same time, we examine the performance of the Algerian State in relation to the global and regional levels in terms of leader or sub-region.

We will therefore have to examine : a) the evolution of e-government and its explanatory factors in Algeria since 2009, when the e-Algeria strategy was launched, and b) the state of the resulting e-services.

1. E-government as discontinuous model.

E-government can be built according to theoretical models describing its evolution (Coursey, Norris, 2008). A model describes the stages in the construction of e-government. These models come in several variants. In fact, the stages they determine generally range from one to five or six (Wescott, 2001; Ronaghan, 2001). And each stage, from the first to the last, has a specific construction, with the possibility of moving from one stage to another without a transitional stage, either two (2) to five (5) or two (2) to six (6) (Hillerand Belanger, 2001; Baum and Di Maio, 2000; Layne and Lee, 2001). So are determined the different stages –from their basic element the governmental world wide web to their full development, i.e. the inter- and intra-activity phase between stakeholders such as government, citizens, business and civil society. In reality, however, all the models are similar in many aspects, since they, at the same time, highlight the progressive evolution, inist and explain the stages considered as those of significant progress, and the stages in which gouvernement acts in series on each stage (Coursey, Norris, 2008). It is important to remember that the final phase is either transactional or citizen participation, and the first is information and emergency. The intermediate phases are those that can be described as progressive and tending towards maturation (Dener, C. and al., 2022), such as interactivity, pronounced use or transaction. From this different progressions are determined the quantities and qualities of electronic services.

The Algerian e-government model will experience a number of setbacks and discontinuity in its implementation process. Indeed, the political and administrative context in which it was set up was marked by the instability of the executive power: a multiplication of successive governments, while the presidency enjoyed relative stability. From 1999 to 2024, Algeria was governed by two presidents elected by universal suffrage (12/1999 to 04/2019 - four terms of five years each - and 12/2019 to 09/2024), an interim president (04/2019 to 01/2020), and a period of socio-political unrest marked by a "peaceful" popular uprising (02/2019/ to 12/2019). During this period, these presidents appointed 27 heads of government, who were either reappointed or dismissed. Gouvernement reshuffles followed, appointing or recalling ministers (for example 25 for Post and ICT, six for digitization), which necessarily had an impact

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firstly on administrative organization and management, through the waltz of appointed officials and central managers with increasingly short terms of office, then on e-gouvernement policy through its perpetual recommencement and redefinition, and finally on the e-services offering.

1.1 Initialization and re-initialization.

Faced with the bureaucratic problems (Ahn, M.J. and Bretschneider, S., 2011) identified by gouvernement officials and deplored by citizens, the public authorities decided in 2009 to launch a strategy to digitize the public sector, called e-Algérie 2013. In other words, a period of five years is planned to establish a convincing e-government. Indeed, the Minister of Posts and Telecommunications, an organization in charge of developing information and communication technologies, announced that "the e-Algérie 2013 strategy aims to roll out an action program to organize Algeria's transformation towards the information society and digital economy over the next five years" (algerie-dz.com, 2/10/2009). The project is ambitious, covering sensitive areas of citizens' daily lives, and consists of a policy of digitizing services in the fields of "e-administration, with the digitization of civil status, e-education and e-health".

This policy of modernizing Algerian public administration by integrating the Internet is in line with UN recommendations, which state that e-gouvernement strategy is defined like "the employment of the Internet and the world-wide-web for delivering government information and services to the citizens" and can include "virtually all information and communication technology (ICT) platforms and applications in use by the public sector. (United Nations - DPEPA/ASPA, 2002).   The means of its realization reside in an appropriate internet infrastructure because, according to the minister "without a good telecommunications infrastructure in Algeria, it's not possible to talk about projects. There are plans to upgrade the infrastructure: we need to reach six (6) million high-speed Internet accesses in Algeria within the next five years; we've already reached only 400,000" (algerie-dz.com, 02/10/2009), despite the fact that Algeria has a population of 35 million, over 80% of whom are literate. For Algerian officials, therefore, the essential thing about e-gouvernement is that it enables the democratization of high-speed Internet access, thereby side stepping the proposition that e-government public policy, as a societal practice, is situated in a democratic perspective (Giraud, Warin, 2008a; Giraud, Warin, 2008b): in other words, it's meaning the management of public affairs by citizens. Between 2009 and September 2013, however, this project remained largely unrealized, for a number of reasons. The fundamental cause, it seems to us, is the changes of gouvernement between 2009 and 2013 : three governments succeeded one another, and three ministers in charge of the "post and information and communication technologies" portfolio passed on instructions to one another. Beyond the deadline (September 2013), e-Algérie2013 will be jeopardized by governmental instability. Indeed, a new government - September 2013/May 2014 - led by the same Prime Minister, was formed with a new Minister in charge of the Post Office and ICTs, and with the innovation of a Ministry attached to the Prime Minister in charge of public service reform. These appointments gave rise to the General Directorate of Civil Service and Administrative Reform, organized into seven (7) central departments, including the IT department. This comprises four subdirectorates: 1.the subdirectorate of computer networks, 2.the subdirectorate of software and applications, 3.the subdirectorate of computer equipment maintenance, 4. the subdirectorate of documentation and archives (Journal Officiel de la République Algérienne-JORA- N° 41

du 06 /07/ 2014/décret exécutif n° 14-194 du 3 juillet 2014). In this we can understand that a governmental desire to lay the foundations for a policy of anchoring IT and the Internet in the public sector. Administrative staff will specialize by directorate and sub-directorate in computerizing public administration. This is a prerequisite for the advent of e-government. As a result, e-gouvernement is still in its infancy. According to the United Nations e-gouvernement survey 2014, Algeria as an Upper Middle Income country achieves a low e-gouvernement development index (EGDI) score of 0.3106, ranking 136th worldwide and 16th in the Top 20 countries in Africa (U.N. e-gouvernement survey 2014/ Department of Economic and Social Affairs DESA). Far behind the world leader -Republic of Korea- which achieves 0.9462 and the African leader -Tunisia an Upper Middle- with 0.5390 in the rank 75th in the world, and less the world Average wich is equal 0.4712, but just a little above of the Regional Average africa with 0.2661. Whereas the scores achieved prior to this date reveal indicators in 2012 at a level of 0.3608 for a rank of 132, and in 2010 they were at a level of 0.3181 for a rank of 131. In other words, progress in this 2010/2014 period is relatively nil, and EGDI remains virtually stable, with a score of around 0.31... But how will e-gouvernement evolve beyond this period?

**1.2. E-government and the instability of executive and administrative power.**

Faced with this slow implementation of e-government, in 2016 the President of the Republic decreed the creation of the National Public Service Observatory (JORA n° 02 of 13/01/2016). The observatory has 25 members, 72% of whom are gouvernement representatives; civil society is represented only by local elected representatives (04), two representatives of national associations and one media representative, i.e. 28%. However, the observatory is just a consultative body (article 2 in decree JORA n° 02 of 13/01/2016) charged with proposing and "evaluating and supervising actions to implement national policy in the field of promoting and developing public service and administration" (article 3).Its recommendations and reports do not have the force of law, and therefore neither impose themselves nor have an effective impact on sectoral e-gouvernement policies. In June 2020, the new president, elected at the end of 2019, set up a Ministry of Digitalization and Statistics, which will be wound up in September 2023, while continuing to keep its website open. Structured into five general directorates: the General Directorate of Digitization; the General Directorate of Statistics; the Directorate of Information Systems and Communication; the Directorate of Cooperation, Legal Affairs and Archives; and the Directorate of General Administration, the whole comprises 29 subdivisions and sub-directorates. Its remit, as for all the reforming administrative bodies that preceded it, is to draw up and implement "the national policy for the promotion and development of digitization and the digital transformation of public administrations and businesses... with a view to improving the quality of public service" (JORA no. 74 of December 08, 2020).

The Ministry, as a transmission belt, offers services that boil down to redirecting citizens, administrative agents or economic operators to address their requests or grievances to the portals and websites of ministries or central departments of ministries or national agencies. These are non-performing sites, waiting to be upgraded or in the process of "migrating to a more efficient site" (https://sidjilcom.cnrc.dz/ date 28/06/2024). In 2022, the Ministry presents a mixed assessment (https://mns.gov.dz/static/document/bilan_num.pdf/), noting that "the qualifications of

the staff in charge of the structures are highly diversified and unsuited to the missions and functions performed,... a wide disparity in terms of IT infrastructures,... dysfunctions in terms of maintenance services". As a result, the objectives need to be redefined, and would involve "making qualitative adjustments to digitization initiatives" and ensuring "the transition from a sector-based, compartmentalized and costly approach to a cross-functional, collective and mutualized one". According to the Ministry's own digital survey (diagram 1), there are 298 digital platforms dedicated to socio-economic activities subject to authorization, of which only 98 have digital platforms.

Fig n°1. Distribution of socio-economic platforms/ 33% active; 58% to be built; 9% not active.

- platforms currently under development 58%
- existing platforms 33%
- non-existent platforms 9%
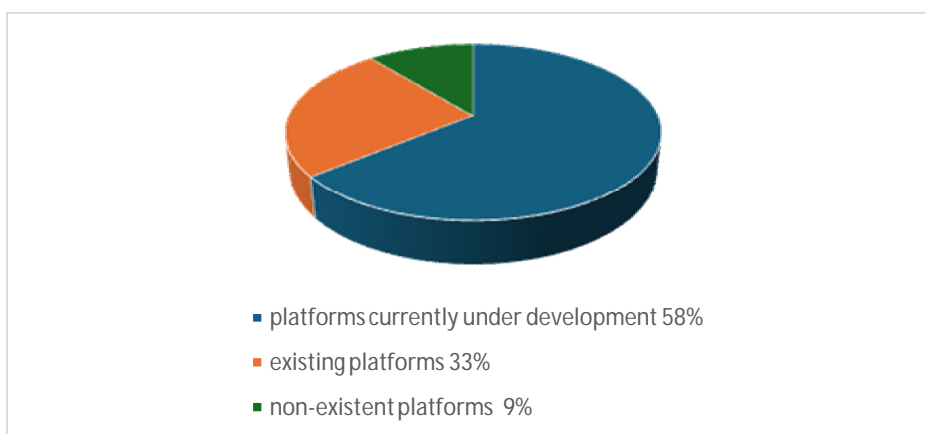
Source: Report of the main activities of the Ministry of Digitalization and Statistics: https://mns.gov.dz/static/document/bilan_num.pdf (consulted on 28/06/2024)

And yet another new institution, the High Commission for Digitization (HCN), will be created (September 2023) as an executive body responsible for administrative reform, with the distinctive feature of having a steering committee to deliberate on the national digitization strategy (article 8) and a scientific and technical committee appointed to give advice and issue recommendations on the national digitization strategy (article 17) (JO RA n° 59 du 10 septembre 2023 /Décret présidentiel n° 23-314 du 6 septembre 2023). The High Commission, which still (07/2024) does not have an operational website, is tasked with "designing the national digitization strategy, in consultation with the sectors concerned, institutions, the economic sector and civil society" (article 4 in JO RA n° 59 of September 10, 2023). This is a *de facto* recognition that the previous policy of digitizing public administration, initiated in 2009, acted by default and lacked a political strategy. The High Commissioner for Digitization is therefore initiating a new strategy by establishing the Algerian National Center for Digital Services in collaboration with Huawei, a Chinese technology producer (dailyelmoudjahed online, 06/23/2024).

1.3. Various other obstacles to the digitization of the public sector.
It seems to us that the second main factor in the failure to achieve the objectives of digitizing public administration is a range of other obstacles. These include resistance to organizational, innovative and managerial change (Crozier M. 1963) through inertia,

reluctance and non-adherence, sabotage and other negative reactions. It is acknowledged that change modifies habits and the environment, and removes certain advantages and privileges, such as those linked to the position and responsibility of civil servants. Electronic service (absence of human presence) by passes the administrator by dematerializing services. So, according to the Board of Directors of the Groupe algérien des acteurs du numérique -GAAN- Algeria is still facing the challenge of digitization: "Launched in 2009 and relaunched in 2018, the 'e-Algérie' project is struggling to achieve all its objectives," because it is still encountering obstacles and blockages to its implementation and use, and "what has been done so far is really not the best approach for setting up e-government" (in the daily El watan-dz 23/04/2023).

Indeed, the digitization of sectors is at a low level, and what's more, the level of use of digital platforms, which are not unified or interconnected, is not known. Seven months after the creation of the High Commission for Digitalization to replace the ministry of the same name, the expert report (https://www.algerieinvest.dz/ of 08/04/2024) found that the Internet infrastructure exists, but is fragmented into isolated sites, while paper-based administration continues to exist. Hence the need for a strategy of interconnections between the various administrations to achieve completely paperless administrative procedures (Kahlane A. 2023). There are, however, small pockets of interconnection, such as the one between the Ministry of Education, the Ministry of Higher Education and the Ministry of the Post Office for student enrolment, or the one between the Ministry of Startups, Finance, the fund of Non-Salaried Workers (known as CASNOS) and the Post Office for obtaining the self-employed entrepreneur's card, where the Ministry of Higher Education is not integrated, eventhough it is home to the houses and sites of entrepreneurship and startups.

This is due to a lack of coordination between government institutions, and the absence of a cross-functional vision enabling the development of a digital feasibility strategy. The example of the unused biometric card is edifying in this respect (https://www.algerieinvest.dz/ of 08/04/2024). The card contains all identification data and personal information, but cannot be used, without authorization, by all administrations, on pain of (theoretical) penal sanctions. Under these conditions, the e-gouvernement strategy consists of creating the legal framework for the exploitation of digitized data and promoting cloud computing (Callejas J.T Flores and Dumitriu P. 2019), thus enabling the interconnectivity of government administrative entities.

So the e-Algeria strategy is stagnating in phase two of its evolution. Will the national services center boost this development? The center was set up with a view to achieving "national digital autonomy and sovereignty". But we can deduce from this e-Algeria approach that the bureaucratic lightening that e-gouvernement aims to achieve is counterbalanced by the administrative heaviness - in the form of a multiplication - of bureaucratic staffs with no real responsibilities, who are supposed to promote or impact the implementation and management of e-government. This administrative procedure - appointing and setting up delegated ministries, committees, observatories, commissions, commissariats, etc. within the presidency, ministries or government - is the main political mode of the government's desire to resolve the problems of the public administration-citizen relationship in the age of digitization. Each ministry "electronizes" its administration at its own level, according to its own skills, resources and perhaps political aims. Incoherence and lack of inter-sectoral coordination thus mark the evolution of e-government. More than fifteen years later, the problem of the advent of e-gouvernement arises in the same terms, and the same strategy is envisaged to solve

it! Thus, e-gouvernement is not a universal prerogative, but depends on contextual parameters, in particular the political one – its implementation - and the pressure of demand (from the population). These determinants are just as much linked to the e-gouvernement development index as to the installation of local websites (Attour, Chaupain-Guillot, 2020).

2. E-governmentdevelopment.

To grasp this slowness we refer to the e-gouvernement development index or EGDI defined by UN experts as the "weighted average of standardized scores on the three most important dimensions of e-government, namely: (i) the scope and quality of online services quantified by the Online Services Index (OSI); (ii) the state of development of telecommunications infrastructure or the Telecommunications Infrastructure Index (TII); and (iii) inherent human capital or the Human Capital Index (HCI). Each of these indices is a composite measure that can be extracted and analyzed independently" and, mathematically, its equation is as follows: EGDI = 1/3 (OSI+ TII + HCI). In the case of Algeria, the EGDI attempts to determine levels relative to the significant contribution of human capital ..., as everywhere in the world whose indicator remains high (UN survey 2014). One criticism can be levelled at the set-up of the EGDI equation: Why is it that while the components are so equivalent in terms of contribution, given that HCI is high all over the world, and that HCI and TII both contribute to the supply of services on the one hand, and to extent that education and teaching are constants in people's lives, while the quest to improve living conditions - health, water supply and conveyance, housing or the use of technology - is the result of the sacrifices and investment capacities of states. In Algeria, the HCI is consistent with a socializing social policy: the population benefits from compulsory public education and free vocational training for the under-18s, unrestricted access to public health care, and water and electricity connections for almost 85% of the population. The essential gap lies in access to the Internet - at low speed - and the availability of IT tools or cell phones, which are still very expensive. According to Global Digital Reports (https://datareportal.com/reports/digital-2024-algeria) the state of digital in Algeria in 2024, withits 45 million people, in early 2024 is: There were 33.49 million internet users in Algeria at the start of 2024, when internet penetration stood at 72.9 percent ; Algeria was home to 24.85 million social media users in January 2024, equating to 54.1 percent of the total population and a total of 50.65 million cellular mobile connections were active in Algeria in early 2024, with this figure equivalent to 110.2 percent of the total population. But report reveals that 12.46 million people in Algeria did not use the internet at the start of 2024, suggesting that 27.1 percent of the population remained offline at the beginning of the year. And the median speed of mobile internet connections is 21mbps while the median speed of fixed internet connections atteint 12.0 mbps. On 2022 global digital report lists the following data: 17.70 million people in Algeria did not use the internet at the start of 2022, meaning that 39.4 percent of the population remained offline at the beginning of the year. While Data published by Ookla (an Ericsson's associate in expanding the data-driven ecosystem to include mobile measurements and crowdsourcing data) indicate that internet users in Algeria could have expected the following internet connection speeds at the start of 2022: Median mobile internet connection speed via cellular networks: 11.44 Mbps for 29.06 world; and Median fixed internet connection speed: 9.78 Mbps very low regarding to connection speed 59.00 in the world (https://datareportal.com/reports/digital-2022-algeria).

2.1 Divergent results.

Compared to African and world levels, Algeria's EGDI appears low. It should be noted that the EGDI level – driven upwards essentially by a very high HCI (0.67 on average) – is higher than the OSI level. There is therefore a discrepancy between a high EGDI and a low OSI, as shown in table number one (1).

Table n° 1. Algeria E-Gouvernement Development Index.

Year	Algeria rank	Index value					Online Service Component	Telecom Infra-structure component	Human Capital Component
		leader		average					
		World	Africa	World	Africa	Algeria			
2010	131	0.879	0.483	0.461	0.273	0.318	0.098	0.125	0.738
2012	132	0.924	0.519	0.488	0.278	0.361	0.255	0.181	0.646
2014	136	0.946	0.539	0.471	0.266	0.311	0.079	0.199	0.654
2016	150	0.919	0.623	0.499	0.288	0.300	0.065	0.193	0.641
2018	130	0.915	0668	0.55	0.342	0.422	0.215	0.389	0.664
2020	120	0971	0.720	0.60	0.391	0.517	0.277	0.579	0.697
2022	112	0.972	0.736	0.610	0.405	0.561	0.374	0.613	0.696
2024	116	0.985	0.862	0.638	0.425	0.596	0.332	0.813	0.642

Source : United Nations e-governementsurvey

The diagram (number 1) of these magnitudes clearly shows thatAlgeria's position, over the period 2010/2022, has evolved irregularly. However, it is just above the African average and below the world leaders and average. The gap with the world leader is narrowing very slightly, from 0.56 to 0.41 (a tiny 27% improvement), while the gap with the African leader tends to increase, from 0.16 to 0.17. Compared with data from 2024 (UN E-Gouvernement survey 2024), even though there is a slight improvement in the score - up to 0.5956 - Algeria falls back to 116th place worldwide, meaning that other countries are making faster progress in digitizing the public sector.

Fig n°2: relative EGDI evolution curves :
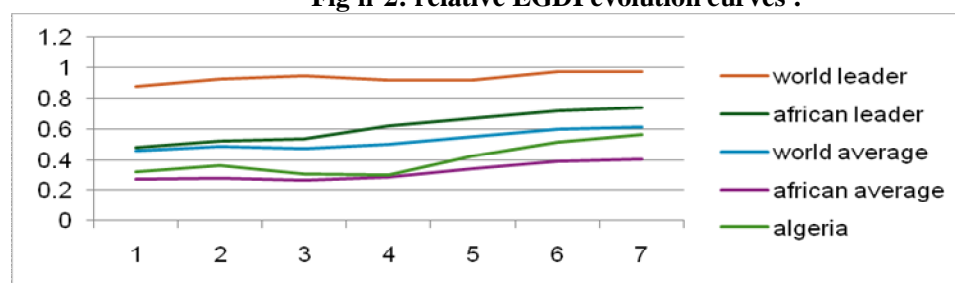
Legend: horizontal axis represents years; vertical axis= EGDI values [0 , 1].

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During the covid-19 period, when the use of e-services is theoretically high, EGDI increases thanks to the contribution of the telecoms infrastructure, without any significant progress being made in the e-services component. In 2022, Algeria, considered as an upper middle-income country, will achieve an EGDI score of 0.5611, placing it among the lower middle-income countries, as shown in table 2 below.

Table n°2. Average EGDI and subindex values, by income group, 2022

Country grouping by income	EGDI average	OSI average	TII average	HCI average
Low income	0.2963	0.3024	0.2139	0.3726
lower-middle income	0.5032	0.4562	0.4441	0.6092
Upper-middle income	0.6470	0.5725	0.6040	0.7645
High income	0.8241	0.7542	0.8420	0.8762
Average for all income groups	0.6102	0.5554	0.5751	0.7001

Source: 2022 United Nations E-Government Survey.

This trend has been driven by a divergence between the rise in the EGDI indicator and the weakness in the supply of electronic services.

2.2 Online services or OSI.

The digitization policy implemented to date (2024) culminates in the government's formalization, in December 2022, of a digital government portal for public services and government information (www.bawabatic.dz, translated this means "your portal" (https://bawabatic.dz/?&lang=fr, consulted 01/05/2023). This Government Portal of Public Services, as it is called by the government, provides "unified access to digitized services to spare users the constraints of electronic searches on multiple existing portals" (in www.bawabatic.dz). It is available in three consultation languages (Arabic, French, English). Four (04) search areas are available to access services: home, citizens, businesses and associations; home opens onto public services and government information (electronic and non-electronic) for citizens, individuals and professionals.

These services are provided by theme –twenty two (22)- (religious affairs, transport, education,...management, industry...) and by sector or ministry –twenty six (26) a number which can vary from one government to another, (justice, communication, agriculture and rural development...). Over two hundred (200) services are offered, and citizens are invited to formulate proposals in the form of opinions and suggestions via a contact form at pgov@mns.gov.dz. The services offered are divided into services and procedures. A service is the on-line monitoring of the progress of an application; while a procedure is the filling in and sending, via the Internet, of a forma vailable on the site: the Ministry of Housing and Urban Planning, for example, has seventeen (17) services and only three procedures. Considering the departments by sector, we obtain their "primary" distribution as follows (table n°3):

Table 3 Services by sector :

Ministry	Number of services
Ministry of the Interior, Local Authorities and Regional Planning	12
Ministry of Justice	15
Ministry of Finance	18
Ministry of Education	13
Ministry of Higher Education and Scientific Research	18
Ministry of Vocational Training and Education	03
Ministry of Energy and Mines	10
Ministry of Culture and Arts	06
Ministry of Youth and Sports	08
Ministry of Digitization and Statistics	02
Ministry of Post and Telecommunications	19
Ministry of National Solidarity, Family and Women'sAffairs	13
Ministry of Industry and Pharmaceutical Production	24
Ministry of Agriculture and Rural Development	50
Ministry of Housing, Urban Planning and Urban Affairs	20
Ministry of Trade and Export Promotion	11
Ministry of Communication	25
Ministry of Public Works and Basic Infrastructures	04
Ministry of Tourism and Handicrafts	20
Ministry of Labor, Employment and Social Security	86
Ministry of the Environment and Renewable Energies	11
Ministry of Fisheries and Fish Production	10
Ministry of Knowledge Economy, Start-Ups and Micro-Enterprises	17
Ministry of Moudjahidine and RightfulClaimants	02
Ministry of ReligiousAffairs and Wakfs	16
Total e-services	435

Source:government portal for public services (https://bawabatic.dz/ consulted on 28/06/2024).
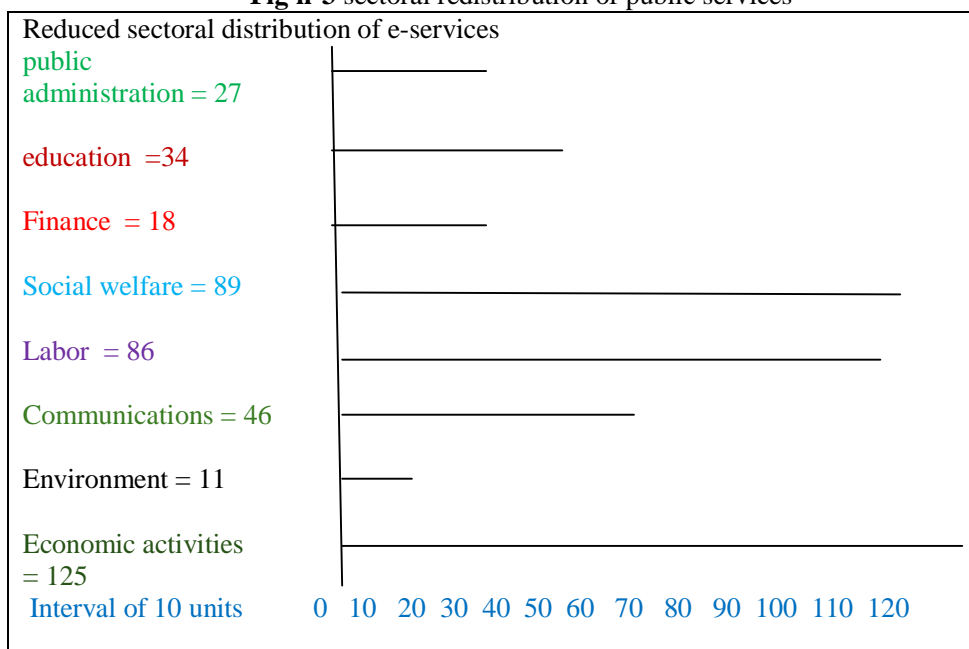
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This distribution can be aggregated (as a secondary distribution), with reference to the sectoral classification of e-services carried out by UN experts (e-gouvernement survey, 2014), and whose "consistency of online service can be a key factor in building trust in the institutions of the government" (chapter2, United Nations E-Government Survey 2012). A distribution of services according to the contribution of the various ministries to the achievement of fundamental public policy objectives - promotion of individual and social well-being - can therefore be drawn up as shown in diagram3:

1. modernization of public administration, data archiving, which includes the Ministries of the Interior and Justice,
2. Education: which includes the ministries of the various levels of education,
3. Finance:includes the Treasury and Customs,
4. Social welfare includes all ministries that contribute to the support and development of individuals or the community, and includes the ministries of culture and the arts, youth and sports, moudjahiddines and beneficiaries, housing, urban planning, national solidarity and the family,
5. Labor and employment,
6. Communications, post, digitization,
7. Environment and renewable energies,
8. Economic and commercial activities.

Three sectors dominate, in terms of size, the e-services types:economic activities, social welfare and labour.

**Fig n°3** sectoral redistribution of public services

Reduced sectoral distribution of e-services

public administration = 27

education = 34

Finance = 18

Social welfare = 89

Labor = 86

Communications = 46

Environment = 11

Economic activities = 125

Interval of 10 units 0 10 20 30 40 50 60 70 80 90 100 110 120

Source:based on data from the government's public services portal (https://bawabatic.dz/ consulted on 28/06/2024).

The evaluation of the quality and characteristics of online services constitutes 'one of the more straight forward aspects of e-government performance

measurement… In practice, evaluation of online services is never that simple…... Through a typical country model, experts identify four stages of development of online services based on country experiences witch: "typically begin with Stage 1 Emerging information services Gouvernement, an emerging online presence with simple websites, progress to Stage 2 Enhanced information services, an enhanced state with deployment of multimedia content, and stage 3 Transactional services two-way interaction, advance to a transactional level with many services provided online and gouvernement soliciting citizen input on matters of public policy, and finally to Stage 4 Connected services a connected web of integrated functions, widespread data sharing, and routine consultation with citizen susing social networking and related tools" (UN egovernment survey, 2010). The online services (OSI) as a component of the E-Government Development Index (EGDI) is a composite indicator measuring the use of ICT by governments to deliver public services at national level. It is a standardized index values. (*U.N. E-Government survey 2014)*. The value of the OSI indicator varies in an interval between 0-low level- and 1-its high level. Its distinct thematic areas form five sub-indices: Institutional Framework (IF), Service Provision (SP), Content Provision (CP), Technology (TEC) and e-participation (EPI) and whose weights are respectively: 10% for I F, 45% for SP, 5% for CP, 5% for TEC, 35% for EPI, (UN.egvt survey 2022). Therefore, SP and EPI form 80% of the OSI index: meaning that if the latter is low, it is participation and service provision that are low or insignificant. As with the EGDI, the online services indicator focuses here on 2014. This date can be seen as a turning point in the policy of modernising public administration in Algeria, insofar as a new policy of administrative reform was launched by the government in place. This involved the overhaul of procedures started in 2014 ''for civil status in order to make a successful transition to e-government'' (Houda, 2022). 2014 performances show a Low online service performance to income: Algeria with an online service index 0. 0787 – under than 0.10- just ahead of four countries with a score of less than 0.05 regarding high online service performance relative to income like Morocco 0.6929 (Lower Middle) or Rwanda 0.5118 (Low income). Relatively, therefore, Algeria's online service indicator is low compared to countries with the same level of income, hereUpper middle income, whose distribution is as follows and which places Algeria in the second interval (0.05; 1) which includes fewer than five countries (fig.3) and fewer than ten countries compared to the distribution considered at world level (fig.4):
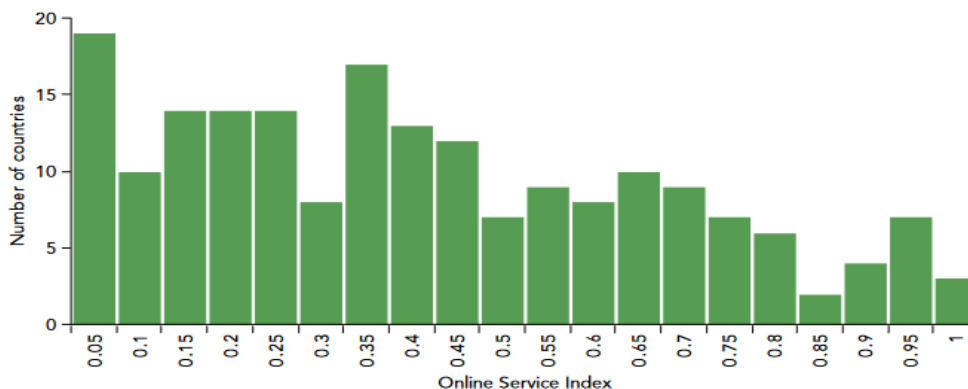
Fig n°4 Distribution of Online Service Index values: Upper middle income countries
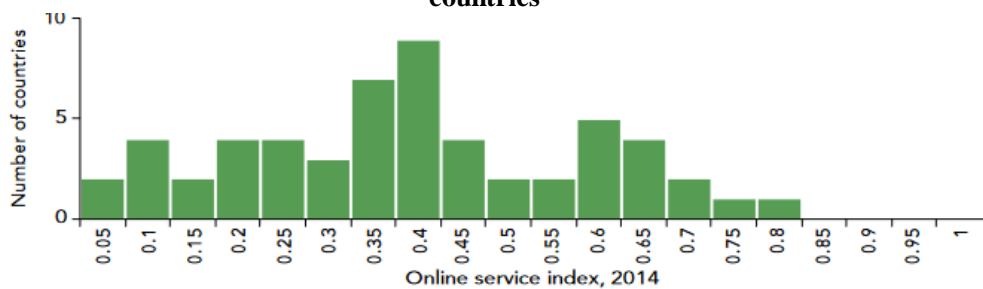
Source : p.55-chapter2, *United Nations E-Government Survey 2014.*

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Fig n°5. Distribution of Online Service Index values integrated all countries is like this :

Source : p.46 -chapter2, United Nations E-government survey 2014.

As citizens become more familiar with and confident of reliable online services, confidence in government increases (Piatak,J.and Jensen, C., 2024). The United Nations e-Government Survey uses a three-level model of e-participation that moves from more 'passive' to 'active' engagement with people. The model includes: 1) e-information that enables participation by providing citizens with public information and access to information upon demand, 2) e-consultation by engaging people in deeper contributions to and deliberation on public policies and services and 3) e-decision-making by empowering people through co-design of policy options and co-production of service components and delivery modalities'' (United Nations e-govrnment survey 2014). However, the level of online services achieved up until 2012 could only give an e-participation score of 4 or virtually zero compared with higher levels such as South Africa 13 or the Netherlands 81; this result is obtained by zero e-information (=0), zero e-decision-making (0) and five e-consultation (=5). Previously, the score achieved by Algeria in online services was around : Index Value 0.2549 of which StageI =75%; stageII= 248%; stageIII= 8%; satgeIV=9%; stageV= 22% (United Nations E-Government Survey 2012).

Has the experience been sufficient to improve this state of affairs? In 2022, with regard to the interaction phase and therefore citizen participation as measured by the e-participation index, Algeria, although having a high EGDI level, achieved a low EPI, which indicates that 'the government's efforts to actively involve citizens in collaborative governance are limited' (U.N. e-government survey 2022). Although the measurement of e-participation has been able to take account of the availability of open public data, particularly in the key sectors in which Algeria invests, such as education, health, employment, justice and social protection, in order to gain a better understanding of 'the engagement between the government and the population in the consultation and decision-making processes', the situation has not changed for all that. Indeed, the digitisation of the public sector is a necessary condition for modernising government organisations, but it is not sufficient without government-citizen interaction, which plays 'a key role in strengthening the delivery of public services and opportunities for community engagement' (UN e-government survey 2022). The e-decision making factor has always been zero, with e-participation averaging less than 0.10 over the period. This e-participation indicator deteriorates in 2024 to a low of 0.055.

In this respect, according to the income distribution by country, Algeria is in the middle half of OSI countries with high or very high TII values and high or very high HCI values; the relatively advanced development of human capital and infrastructure can provide a solid basis for efforts to improve the provision of online services in these countries.

Table n° 4 index value online services OSI Algeria Evolution.

Year	Algeria index value	Index value							Observations notedfrom e-government reports
		leader		average		e-participation index			
		World	Africa	World	africa	Algeria	World leader	African leader	
2010	0.098	1.000	0.530	0.274	0.144	0.014	1.000	0.300	Only a few countries - 32% - are able to offermanytransac-tional services online at this time
2012	0.255	1.000	0.601	0.433	0.257	0.053	1.000	0.343	websitesaim at centralizing the entry point of service delivery to a single portal wherecitizens can access all gouver-nementsupplied services,
2014	0.079	1.000	0.693	0.392	0.201	0.078	1.000	0.804	Open Gouvernement Data introduces a new approach to publishinggovernment data and helps bridge the gap betweengovernment and citizens
2016	0.065	1.000	0.717	0.462	0.257	0.119	1.000	0.831	The issue thatmanygovern-ments are tacklingtodayis not whether to open up their data, but how to do so.
2018	0.215	0.979	0.806	0.569	0.363	0.202	0.983	0.788	Many people in Africa are unable to benefitfromICTsbecause of poorconnectivity, high cost of access and lack of necessaryskills
2020	0.277	0.994	0.700	0.562	0.370	0.155	0.988	0.75	Sinceearly 2020, the global COVID-19 pandemic has reinvigorated the role of e-government. The utilization of conventional digital government services isbecoming more widespread
2022	0.374	0.983	0.749	0.555	0.367	0.227	1.000	0.546	Leaving no one behind in the hybrid digital society
2024	0.332	1.000	0.887	0.565	0.386	0.055	1.000	0.84	In their interactions with e-government platforms, people generally prefer to have easy access to digital information and services and to complete all transactions fully online through a single, integrated system of services delivery

Source/UN e-gouvernement survey/ 20210….2024.

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In what follows, we distinguish between LOSIs and OSIs. LOSIs, introduced in 2020 as a more refined measure of e-gouvernement development, are e-services provided on a local scale and generally relate to large cities, particularly country capitals or those that have become leaders by achieving high scores (Table 5), as provided in particular in the e-gouvernement survey. In what follows, we compare Algiers with other leading global, regional and sub-regional cities.

**Table n°5 : Local Online Services Index : LOSI (Algiers on comparaison).**

Year		Algeria	Town leader World	Town leader Africa	Tunisia	Morroco
2020	.	Algiers	Madrid	Johannesburg	Tunis	Casablanca
	I.V	0.2875	0.9625	0.55	0.4125	0.3
	riw	56	1	26	40	54
2022	.	Algiers	Berlin	Johannesburg	Tunis	casablanca
	I.V	0.2209	0.9767	0.6163	0.4651	0.4535
	riw	125	1	57	80	82
2024		Algiers	Tallinn & Madrid	Kigali	Tunis	Casablanca
	I.V.	0.1354	0.9271	0.625	0.4167	0.4261
	riw	144	1	55	89	86

Source/UN e-gouvernement survey/ 2020 ;2022, 2024. I.V. = Index value ; riw= rank in the world

In terms of online service provision, Algiers has fall sharply since 2020 and ranks 144th in the world in 2024, far behind cities in countries with fairly significant poverty thresholds, such as Mogadishu 126°, Freetown 116° or Nairobi 56°! At the Maghreb level, Casablanca and Tunis perform better, with higher and more competitive LOSI indicators than Algiers.

The following diagram illustrates Algeria's position in the world and in Africa in terms of leadership and average.

Fig n°6 Algeria Evolution of index value of online services OSI.
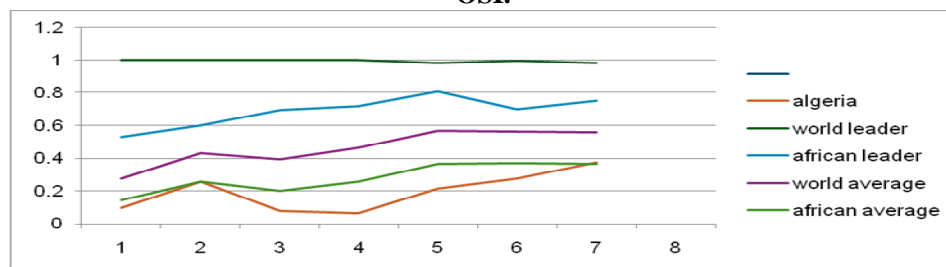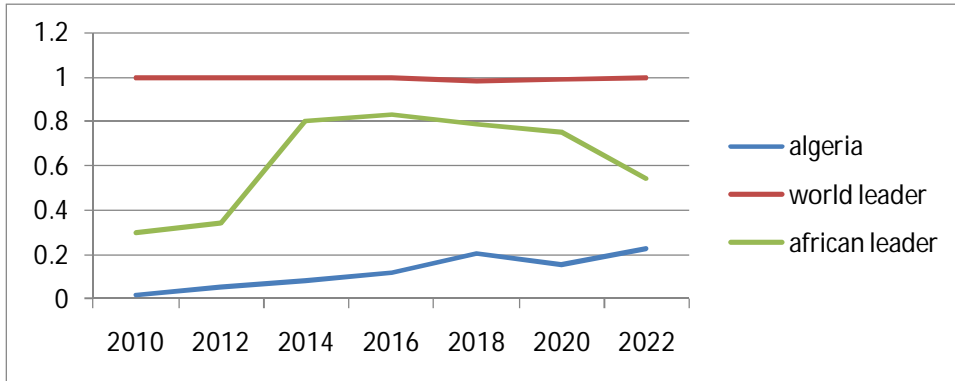

Source: UN e-gouvernement survey/ 20210....2024; years are on the x-axis.

Even as it rises, the OSI Algeria curve remains below the rest of the world, demonstrating the very significant gap with world averages:in 2022, Algeria will be positioned just at the level reached by the world average before 2012. The same remark can be applied to the LOSI indicator, according to which Algiers achieves values that are too low, placing it respectively in 2022 and 2024 at 125th and 144th place in the world.

While the evolution of the e-participation indicator (described as follows in diagram no. 7) shows a clear decline in Algeria's position in 2024, with an indicator of 0.05 virtually nil, it seems far removed from that of the rest of the world, which is evolving steadily at a high level for the developed world represented by the leading country, and at an accelerating manner for Africa represented by its leader.

Fig n°7 : e-participation index evolution

Source: UN e-governmentsurvey/ 20210....2022.

Thus, at EGDI, OSI and LOSI levels, Algeria is called upon to adopt a policy based on greater effort and efficient investment, and to determine an e-gouvernement strategy in which the e-participation index must be improved.

Conclusion

An analysis of the data we have used, gathered from official bodies and ministerial declarations or taken from the websites of global organizations, indicates that Algeria is experiencing many difficulties in setting up and implementing its e-government. It's not so much the technological infrastructure and human capital that are lacking, but rather their management and implementation strategies, which remain ineffective.From its initialization as an e-Algeria strategy and the institution of administrative reform, through to the decision to digitize the entire public sector, using a variety of instruments at different times to launch the project, such as the IT department, the national observatory and the digitization commission, e-government has been slow in coming to fruition and that is out of all proportion to the means implemented. Its performance remains dependent on the political will of the various ministers and officials who have succeeded one another in the position of responsibility, and on many obstacles and constraints linked to the instability of executive power, and therefore to the high-frequency internal mobility of administrators. The impact of these factors is a situation of digital backwardness in the public sector, revealed by the discrepancies between the levels achieved by the EGDI indicators – pulled upwards by the TII and the HCI - and the OSI and LOSI indicators, which remain low as a result of very low or almost non-existent e-participation. Such a position, for an upper middle-income country, limits both the supply of dematerialized public services and citizens' confidence in government and public policy. As a result, the digitization strategy remains at short-term challenge for political leaders.

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